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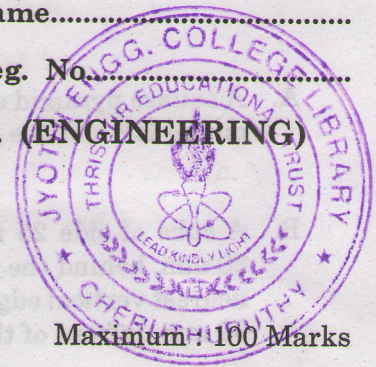Name...

Reg. No....................................

COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, MAY 2011

EN 04 106A—ENGINEERING GRAPHICS

(For AI, CS, EE, EC, IT, IC, PT, BM, BT)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.
All questions carry equal marks.

Module I

A. A line PQ has its end P 10 mm. above the HP and 20 mm. infront of VP. The end Q is 35 mm. infront of the VP. The front view of the line measures 75 mm. The distance between the end projectors is 50 mm. Draw the projections of the line and find its true length and its time inclination with the VP and HP.

Or

B. A straight line ST has its end S 10 mm. infront of the VP and nearer to it. The mid-point *m* of the line is 50 mm. infront of the VP and 40 mm. above the HP. The front and top views measure 90 mm. and 120 mm. respectively. Draw the projections of the line. Also find its true length and inclinations with the HP and the VP.

Module II

A. An equilateral triangular lamina ABC of 50 mm. side lies with one of its edges on VP so that the surface of the lamina is inclined at 45° to VP. The edge on which it rests is inclined at 30° to HP. Draw the projection by auxillary plane method.

Or

B. Three spheres P, Q and R of 72 mm., 40 mm. and 20 mm. diameters respectively are resting on the horizontal plane each touching the other two. If the line joining the centres of the sphere P and Q is parallel to VP. Draw the projection and show the point of contact.

Module III

A. A hexagonal pyramid of base side 40 mm. and axis length 60 mm. is resting on HP on its base sides being perpendicular to VP. It is cut by a plane perpendicular to VP and parallel to and 35 mm. above HP. Draw its front and sectional top view.

Or

B. A cone of base diameter 60 mm. and altitude 70 mm. rests vertically on its base on the ground. A slot of shape of an equilateral triangle of side 30 mm. is cut through the cone so that its axis is perpendicular to the VP and meets the axis of the cone at right angle. The base of the slot is at a distance of 10 mm. above the base of the cone. Draw the developments.

Turn over

Module IV

A. A square pyramid edge of base 40 mm. and axis 60 mm. long is lying on one of its triangular faces on the HP and the axis is parallel to VP. Draw the isometric view of the given pyramid.

Or

B. A cube of side 25 mm. rests on one of its faces on the ground, the nearest vertical edge being 20 mm. behind the picture plane and 40 mm. to the left of the station point. A face containing the nearest vertical edge is inclined at 60° to the PP. The station point is 40 mm. above the ground and 60 mm. infront of the PP. Draw the perspective view of the cube.

Module V

A. Draw the front view, top view and front view of the object shown below :
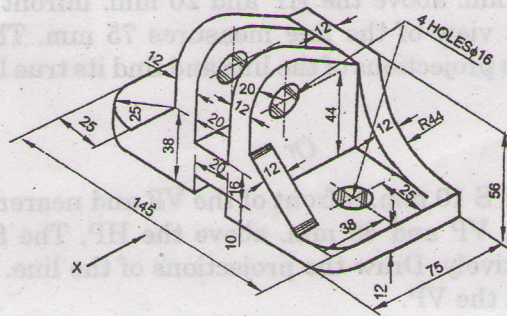
Or

B. (i) Sketch an eye bolt and a stud bolt incorporating various proportions.   **(10 marks)**

    (ii) Draw a lock nut and grooved nut for locking nuts in position if the bolt diameter is 25 mm.

                                                             (10 marks)